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OMINGMAK MIRROR

A newspaper published by the National Museum of Natural Sciences

Muskox on wheels

Imagine a turn-of-the-century muskox, fetched from retirement in a museum "attic" to become the star attraction in a cross-country exhibit — complete with a new set of wheels. That's just about how it was for the two shaggy beasts, collected in the Arctic in 1904, that make up the centrepiece of the National Museum of Natural Sciences travelling exhibit, *Omingmak — the muskox*.

It took some dusting and a few touch-ups but the two bulls stood as proud as ever for the exhibit's opening on the third floor of the National Museum in May 1980. And the wheels? Well, they're just to help move the animals when they tour the country. The exhibit will travel from British Columbia to Newfoundland and the Arctic until 1985.

As the museum muskoxen were first breaking into public life in the early 1900s, all was not well with their relatives in the north. The exhibit tells the story of how the muskox was nearly wiped out by explorers, fur traders and whalers, until a hunting ban in 1917 allowed the small herds to recover.

It also tells you everything you might want to know about muskox behaviour through the eyes of a veteran muskox-watcher. Dr. David Gray, an Assistant Curator at the Museum, has watched muskoxen for eleven summers and one chilling winter on Bathurst Island in the Arctic Archipelago. He has watched the woolly creatures feed, play, fight, mate, rear their young, and defend themselves against their enemy, the arctic wolf. In the frigid temperatures of a high arctic winter, he has watched how they survive in their northern environment, and how they sometimes perish in it.

He has also watched great changes sweep across Omingmak's homeland. Today's Arctic is no longer a land dominated by whaling ships and fur traders — but in their place heavy vehicles etch their tracks in the tundra, leaving a constant reminder of man's search for riches in the north.

Muskox homeland threatened

by Carol Thiessen

When the choicest homes for arctic wildlife are also the sites of valuable mineral and oil deposits, whose interests do you put first? For Omingmak, the answer to this question could be crucial.

Today the muskox is not considered an endangered species. But just 60 years ago this woolly creature, which has survived almost unchanged since the Ice Age, was threatened with extinction. Explorers, whalers, and fur traders had discovered the wealth of the Arctic, and for a century thousands of muskoxen were slaughtered for food and hides. By 1917 they had been wiped out in some parts of the north, and their numbers were so low elsewhere that the Canadian government imposed a ban on hunting.

In the 1920s they were given additional protection when the government created the Queen Elizabeth Islands Game Preserve in the Arctic Islands and the Thelon Game Sanctuary in the central tundra. The surviving muskox herds recovered steadily, until today limited hunting is allowed by Inuit settlements in the north.

Now Canada's muskoxen face a new threat, one that is more subtle but potentially as dangerous.

In the high arctic islands, where much of the land is barren and rocky, there exist delicate "oases" with ponds and rushing streams where clumps of willows, grassy meadows and bright summer flowers provide rich feeding grounds for muskoxen and other arctic animals. In the severe northern environment, these pockets of life are critical for the survival of wildlife. Sudden weather changes or human interference in these areas could spell disaster for the animals that rely on them.

Yet, as the search for arctic resources gathers momentum, some of these fertile areas are also being found to have rich deposits of oil and minerals. For this reason, many people who are concerned about arctic animals have proposed that some of these oases be set aside as ecological reserves, off-limits to resource development, so that the wildlife and their habitats will be protected.

Polar Bear Pass is one such oasis. A broad, low valley stretching across Bathurst Island, the Pass provides a life-support system for some of the highest concentrations of birds and mammals in the high arctic. Polar Bear Pass is also the site of the High Arctic Research Station, and from this observation site museum scientist, David Gray, has seen hundreds of muskoxen and caribou grazing in the valley.

Yet this idyllic spot has also been the scene of disaster for Omingmak. In the winter of 1973-74, heavy wet snowfalls and low temperatures combined to freeze layers of snow to a cement-like hardness. As a result, the muskox herds could

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Muskoxen vs wolves

If you were a creature growing up in the wild, one of the first things you'd need to know is how to protect yourself against your enemies.

For the muskox, this means cooperation. When a pack of arctic wolves approaches a muskox herd, they react by grouping together in a tight defence formation with horns facing their attackers.

In one wolf attack that Dr. David Gray witnessed, the muskoxen first moved close together until they were facing the wolves in a shifting line with rumps pressed tightly together and calves wedged safely between the adults. As one wolf began circling the herd, they moved around to become a rough circle with each muskox facing the nearest wolf and pushing backwards so its rump touched the others.

Then individual bulls and cows began to charge out at the closely circling wolves. Once, when the lead bull charged, a wolf leapt at his flank. The bull whirled around to dislodge his attacker, and the rest of the herd moved up close behind him.

The attack lasted 25 minutes, until the wolves finally gave up and left. Dr. Gray described the defence formation as "a shifting mass of muskoxen, first charging one way, then another." By such teamwork they managed to keep the wolves from circling behind any one individual.

The muskox defence formation, an effective protection against the arctic wolf, is also used less appropriately to respond to any disturbance, including low-flying planes and hunters.

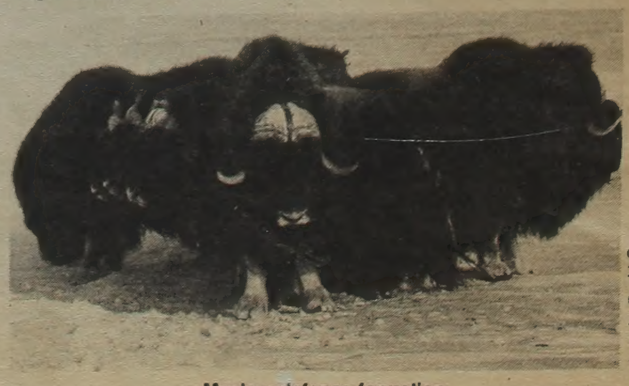

Muskox defence formation

photo by David Gray

"THERE GOES THE NEIGHBOURHOOD!"

Muskox homeland

continued

not dig through to the vegetation below, and many left the broad valley for the barren, wind-swept ridges above. By spring, half the Bathurst Island muskoxen had died of starvation, including all the calves.

While natural disasters like this emphasize the precarious existence that muskox herds live, scientists can only speculate about what effect human interference has. In the same year as so many muskoxen were slowly dying of starvation, oil exploration crews were crisscrossing the valley setting off seismic explosions that could be easily heard 10 kilometres away. Did the invasion of aircraft and seismic vehicles, and the noise of constant blasting have an effect on the starving muskoxen? Scientists don't know for sure, but they do know that muskoxen react to noise by running away, often in a stampede. And if a herd stampedes away from its food source, starvation may result.

In 1975, Polar Bear Pass was among the sites proposed by scientists to be set aside by the government of Canada as an ecological reserve. A decision has yet to be made.

Meanwhile, the protection given to Omingmak in the 1920s is being eroded. In 1966, the government withdrew the Queen Elizabeth Islands Game Preserve, leaving only one place in the whole of arctic Canada where muskoxen and their habitat are protected. And as mining interests exert pressure to exploit the resources in the Thelon Game Sanctuary, even this site is threatened.

When a conflict exists between Arctic wildlife and resource development, whose interests do you put first? The answer is up to all of us.

If you would like to express your opinion about whether Polar Bear Pass and other arctic oases should be protected, write to:

Minister,
Department of Indian Affairs and Northern Development,
Ottawa, Ontario 'K1A 0H4

Muskox-watching in winter a chilly sport

In a land where night lasts for three months and temperatures plunge to well below zero, sitting behind a snowdrift watching muskoxen might not sound very inviting. But for biologists David Gray and Donald Cockerton, the chance to spend a winter in the high artic studying muskox behaviour was too exciting to be missed.

Their home for 10 months was a fabric-covered hut called the High Arctic Research Station on Bathurst Island. From there, with the aid of a spotting scope, they could see 155 square kilometres of Polar Bear Pass.

Each day they travelled on foot or skiis to get a better look at the muskox herds. Dressed in white camouflage suits, or huddled behind rocks or snowdrifts, they collected notes, photos and films. To avoid scaring the animals or influencing their behaviour, they never approached too closely. And when arctic temperatures became really frigid, they took turns crawling away, out of sight of the herd, to do a warming-up dance.

For all the long hours of watching muskoxen eat and rest, there were also moments of intense excitement. In September, as smaller herds joined together for winter, they witnessed a magnificent clash between two lead bulls. Like two war-horses on a medieval jousting ground, the bulls charged each other again and again. Each head-on collision sent a loud crash into the still arctic air. For 20 minutes the two bulls battled, charging and hooking with their horns, until finally a victor emerged and the loser galloped off into the tundra.

These are the spectacular sights, the ones that keep field biologists coming back year after year. Their ringside seats may not be the ultimate in luxury, but the show is one few people ever get to see — animals in nature, going about their daily lives, undisturbed.

The icy temperatures, freeze-dried food, and ski tours by starlight are merely bonuses!

Photo by Stu Macdonald

Dr. David Gray watches muskoxen

Sole survivor

It seems incredible that muskoxen can bear the bitter Arctic cold, when we shiver and complain about the winters in southern Canada. Such hardiness did not come easily, however. Like everything in Nature, it took many thousands of years of evolution.

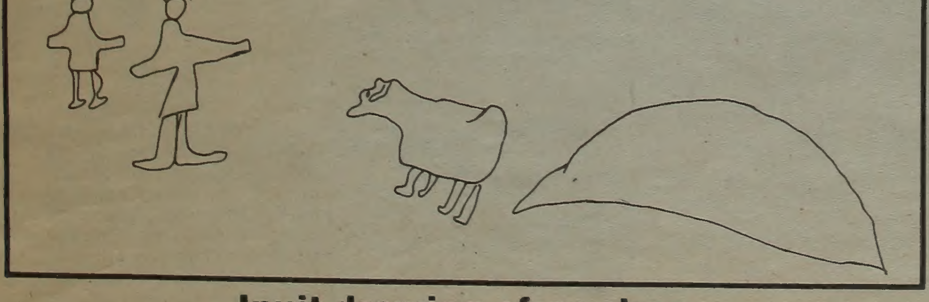
Twenty million years ago the climate of the Earth was much warmer than today. The dinosaurs were long gone, wiped out by some mysterious catastrophe 40 million years earlier, and the world belonged to the ancient mammals. They came in a fantastic variety of sizes and shapes. Some would seem strange and unrecognizeable to us, but many, such as the early elephants, rhinoceroses, pigs and cats would be familiar.

As time passed the climate gradually grew cooler and drier, causing forests to shrink and grasslands to spread. In the heart of Asia, the hoofed animals best suited to this environment exploded into a variety of fast-running, grass-eating forms such as gazelles, antelopes, early goats and sheep. In the cool grassy mountain valleys of Tibet a peculiar beast evolved with massive horns and the ability to withstand cold mountain winds. Scientists think this animal, *Urmiatherium*, was one of the first muskoxen.

As the world climate continued to cool, many of the ancient wonderful mammals died out, and some of the early muskoxen came down from their mountain homes to spread over the new grassy plains. Two million years ago, when snow began to pile up into the gigantic ice sheets of the Ice Age, only a few animals already used to the cold could survive in the north. These hardy mammals, including mammoths, caribou, bison, mountain sheep and muskoxen, thrived in the wintery climate and were able to expand into North America by crossing a dry land bridge that existed between Siberia and Alaska during peaks of glaciation.

By the time the Ice Age reached its peak there were several kinds of muskoxen in North America and Eurasia. There were "Tundra Muskoxen", the kind living in the Arctic today, "Helmeted Muskoxen", a little larger and lankier with wide flaring horns, and "Alpine Muskoxen", mountain dwellers that ranged over the alpine valleys as far south as Mexico! About 15,000 years ago most of these muskoxen and many other large Ice Age mammals, including the Woolly Mammoth and the fleet American Lion, mysteriously disappeared. The Tundra Muskox of Arctic Canada and Greenland is the only surviving muskox. A close relative, the Takin, still lives in the ancestral muskox homeland, Tibet and Western China.

Glacial ice has come and gone many times in the last three million years. We are now in a warm interglacial period. It seems likely that the world climate will continue to cool, and the glaciers will come again. Despite our complaints about icy winters, we wouldn't notice the beginning of a new Ice Age, the process is so gradual. If the ice does come again though, Omingmak, the Tundra Muskox, will be waiting.



Inuit drawing of muskox

For the young Inuit who drew this picture, muskoxen are a familiar part of his surroundings. He lives in Grise Fiord, a tiny settlement on Ellesmere Island, and is a student at Canada's most northerly school. Ellesmere Island is such a great place to watch muskoxen that they even named their school after Omingmak.

The picture is one of several that David Gray received as a thank you for sending the school a southern treat... comic books.

Omingmak Mirror

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Game adapted from Activity Centre Summer Youth Group

Taxidermist at work

Have you ever wondered how the animals in an exhibit got there?

Grant Laturnus, a young museum taxidermist, is one person who can tell you. Grant mounted the baby muskox that forms part of the centrepiece of the travelling exhibit, *Omingmak — the muskox.*

Scientists found the six-week-old calf in Polar Bear Pass in 1972. They speculated that it had probably been separated from the herd and starved to death.

When Grant received the calf, it had been kept frozen for 8 years. He began by cutting a wooden centreboard the same shape as the calf, attaching steel rods for legs, and moulding a body by wrapping excelsior and twine around this wood and steel "skeleton". Before fitting the calf's hide around the form, Grant also had to replace some pieces of fur and skin that had been eaten away by arctic foxes.

Grant believes that the taxidermic work he does has an important place in conservation. It allows people who may not get a chance to see animals in nature, to study them in detail at a museum, and by doing so develop an interest in wildlife.

A keen naturalist since he was 6 years old, Grant got his start as a taxidermist early. When he was 13, his classroom's pet guinea pig died and the teacher suggested they learn about taxidermy and stuff the guinea pig as a class project. Grant and two others volunteered but Grant was the only one who stuck with it. It took him a week and the finished product looked more like a miniature polar bear than a guinea pig, but it was enough to stimulate him to read and learn more.

Since those early days he has worked for a taxidermist in Germany, and studied museum technology in Ottawa. He feels he *really* started to learn the finer points of taxidermy when he came to the National Museum of Natural Sciences to work under the watchful eyes of Head Taxidermist, Terry Morgan, a veteran of 25 years.

Grant Laturnus prepares muskox calf to meet the public

National Museums of Canada

Answers to game

1. *Omingmak*
2. *Grass and flowers*
3. *Qiviut*
4. *Challenge of dominant bull, and defence*
5. *Arctic wolf or man*

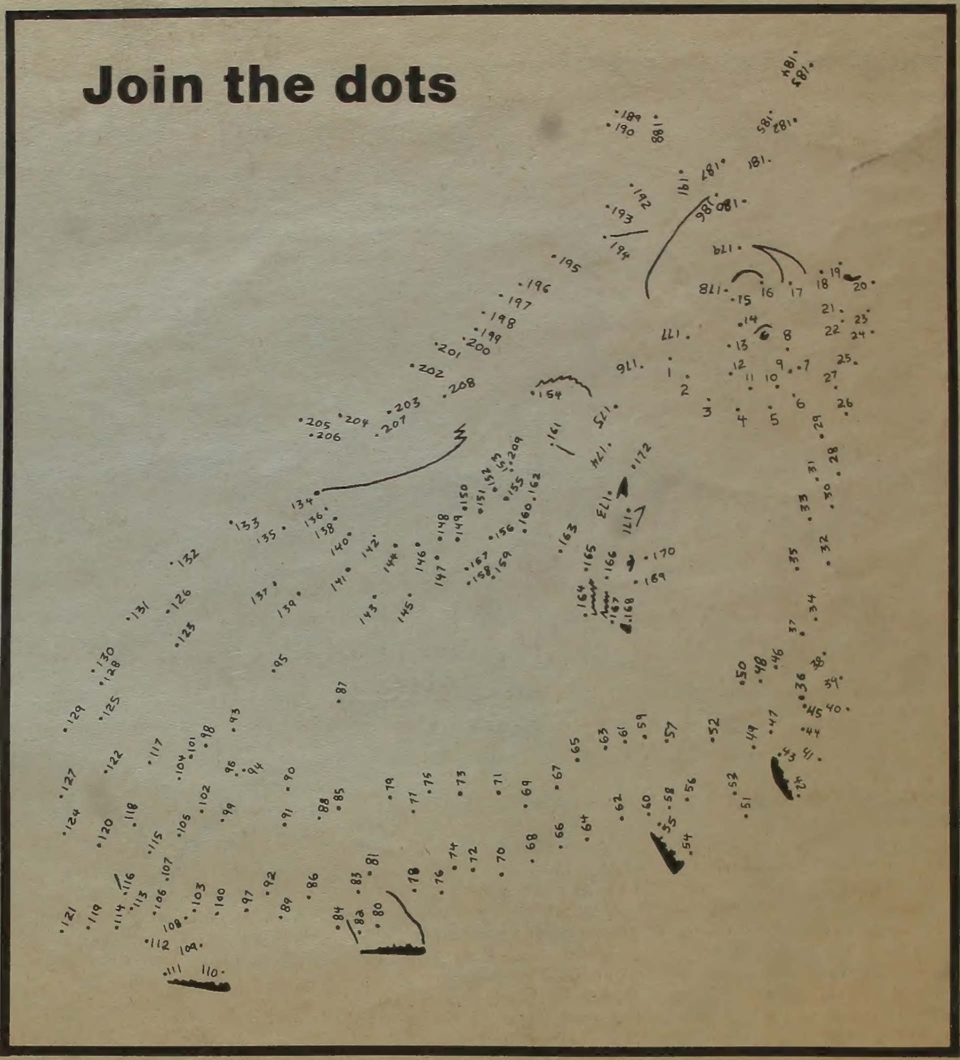
Muskox miscellany

Omingmak is the Inuit word for muskox and means "the animal with skin like a beard"

Qiviut is the Inuit name for the soft woolly undercoat of the muskox. It is one of the finest and costliest natural fibres known.

Early Eskimos used muskox hides for warm sleeping robes and horns for weapons and implements. Today Inuit hunting of muskoxen is controlled by a quota system.

Join the dots



Muskox tee-shirts

No, these aren't tee-shirts *for* muskoxen — their wool keeps them warm enough already, and besides, they couldn't get their horns through the neck hole. They're high quality, comfortable shirts with Omingmak doing his best to look fierce on the front.

Museums across the country that display the exhibit *Omingmak — the muskox* will be selling these tee-shirts. Check with your local museum now!

Tundra fun

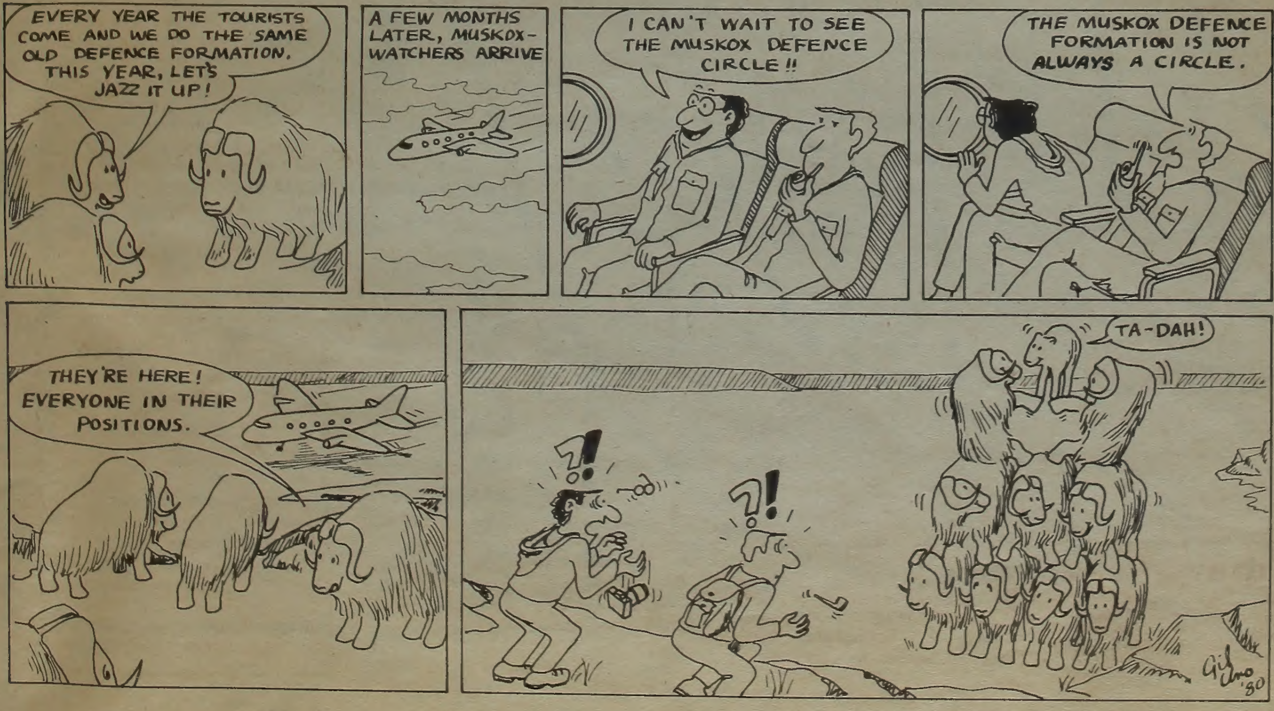
Growing up on the tundra can be tough at times, and scary. But life is not all wolf attacks and hard winters.

Like many young animals, baby muskoxen spend much of their first summer playing . Although they are timid and wobbly when newborn, within a few days they become quite independent. While playing together they may wander far from their mother's side, only returning when they are hungry or when danger is near.

Scientists had a chance to watch this lighter side of muskox life when they spotted two calves early in spring 1975. The fuzzy pair, probably only about three weeks old, were the first they had seen in two years. The previous winter all calves had died of starvation.

There was nothing wrong with these two. They frolicked in the snow, running, whirling, jumping, swinging around, and butting at the snow and each other. They pushed and shoved until one or both collapsed. And then they picked themselves up and started all over again.

Their antics were so funny that amused scientists had no trouble finding a name for them — "Smiles and Chuckles".


EVERY YEAR THE TOURISTS COME AND WE DO THE SAME OLD DEFENCE FORMATION. THIS YEAR, LET'S JAZZ IT UP!
A FEW MONTHS LATER, MUSKOX-WATCHERS ARRIVE
I CAN'T WAIT TO SEE THE MUSKOX DEFENCE CIRCLE!!
THE MUSKOX DEFENCE FORMATION IS NOT ALWAYS A CIRCLE.
THEY'RE HERE! EVERYONE IN THEIR POSITIONS.
?!
?!
TA-DAH!
Gil Ono '80

Come see us

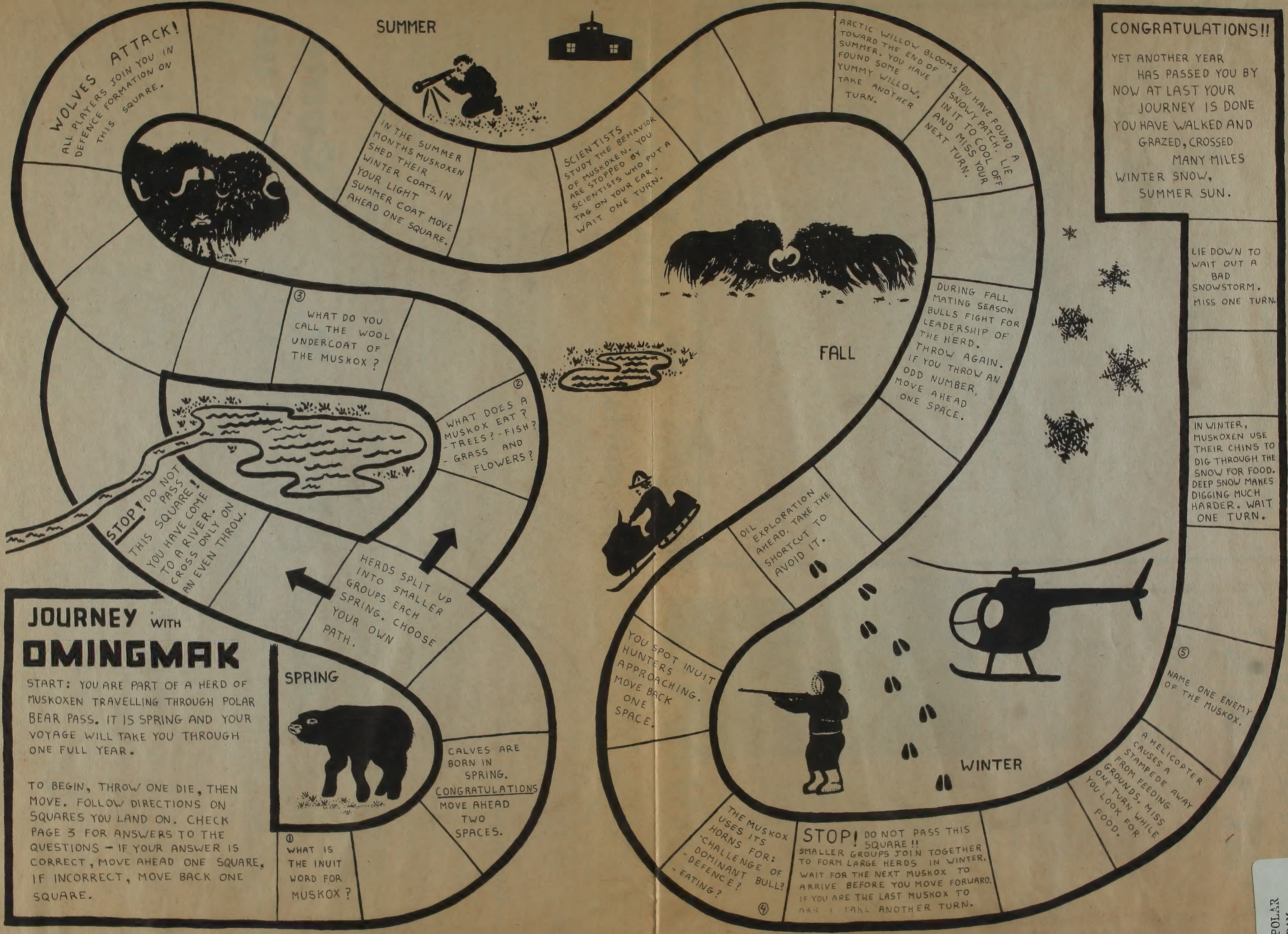
There's more to the National Museum of Natural Sciences than muskoxen. Museum scientists collect and study fossils, birds, snakes and fish, plants, minerals, molluscs and mammals. The Interpretation and Extension Division of the Museum produces exhibits and public programmes on these topics. If you're in Canada's capital, we're at the corner of Metcalfe and MacLeod Streets. Drop in and see us. We know we have something to interest you.

The National Museum of Natural Sciences
Ottawa, Ontario
K1A 0M8
(613) 996-3102

JOURNEY WITH OMINGMAK

START: YOU ARE PART OF A HERD OF MUSKOXEN TRAVELLING THROUGH POLAR BEAR PASS. IT IS SPRING AND YOUR VOYAGE WILL TAKE YOU THROUGH ONE FULL YEAR.

TO BEGIN, THROW ONE DIE, THEN MOVE. FOLLOW DIRECTIONS ON SQUARES YOU LAND ON. CHECK PAGE 3 FOR ANSWERS TO THE QUESTIONS – IF YOUR ANSWER IS CORRECT, MOVE AHEAD ONE SQUARE, IF INCORRECT, MOVE BACK ONE SQUARE.



① WHAT IS THE INUIT WORD FOR MUSKOX ?

CALVES ARE BORN IN SPRING. CONGRATULATIONS MOVE AHEAD TWO SPACES.

HERDS SPLIT UP INTO SMALLER GROUPS EACH SPRING. CHOOSE YOUR OWN PATH.

STOP! DO NOT PASS THIS SQUARE! YOU HAVE COME TO A RIVER. CROSS ONLY ON AN EVEN THROW.

② WHAT DOES A MUSKOX EAT ? - TREES? - FISH? - GRASS AND FLOWERS?

③ WHAT DO YOU CALL THE WOOL UNDERCOAT OF THE MUSKOX ?

WOLVES ATTACK! ALL PLAYERS JOIN YOU IN DEFENCE FORMATION ON THIS SQUARE.

IN THE SUMMER MONTHS MUSKOXEN SHED THEIR WINTER COATS. IN YOUR LIGHT SUMMER COAT MOVE AHEAD ONE SQUARE.

SCIENTISTS STUDY THE BEHAVIOR OF MUSKOXEN. YOU ARE STOPPED BY SCIENTISTS WHO PUT A TAG ON YOUR EAR. WAIT ONE TURN.

ARCTIC WILLOW BLOOMS TOWARD THE END OF SUMMER. YOU HAVE FOUND SOME YUMMY WILLOW, TAKE ANOTHER TURN.

YOU HAVE FOUND A SNOWY PATCH. LIE IN IT TO COOL OFF AND MISS YOUR NEXT TURN.

DURING FALL MATING SEASON BULLS FIGHT FOR LEADERSHIP OF THE HERD. THROW AGAIN. IF YOU THROW AN ODD NUMBER, MOVE AHEAD ONE SPACE.

OIL EXPLORATION AHEAD. TAKE THE SHORTCUT TO AVOID IT.

YOU SPOT INUIT HUNTERS APPROACHING. MOVE BACK ONE SPACE.

④ THE MUSKOX USES ITS HORNS FOR: - CHALLENGE OF DOMINANT BULL? - DEFENCE? - EATING?

STOP! DO NOT PASS THIS SQUARE!! SMALLER GROUPS JOIN TOGETHER TO FORM LARGE HERDS IN WINTER. WAIT FOR THE NEXT MUSKOX TO ARRIVE BEFORE YOU MOVE FORWARD. IF YOU ARE THE LAST MUSKOX TO ARRIVE TAKE ANOTHER TURN.

A HELICOPTER CAUSES A STAMPEDE AWAY FROM FEEDING GROUNDS. MISS ONE TURN WHILE YOU LOOK FOR FOOD.

⑤ NAME ONE ENEMY OF THE MUSKOX.

IN WINTER, MUSKOXEN USE THEIR CHINS TO DIG THROUGH THE SNOW FOR FOOD. DEEP SNOW MAKES DIGGING MUCH HARDER. WAIT ONE TURN.

LIE DOWN TO WAIT OUT A BAD SNOWSTORM. MISS ONE TURN.

CONGRATULATIONS!!

YET ANOTHER YEAR
HAS PASSED YOU BY
NOW AT LAST YOUR
JOURNEY IS DONE
YOU HAVE WALKED AND
GRAZED, CROSSED
MANY MILES
WINTER SNOW,
SUMMER SUN.

POLAR
PAM
3638
POLARPAM